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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/568,525	02/15/2006	Mitsuhiro Kashiwabara	3712174.00517	2922

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EXAMINER	
BREVAL, ELMITO	

ART UNIT	PAPER NUMBER
2889	

NOTIFICATION DATE	DELIVERY MODE
10/28/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

chicago.patents@klgates.com

Office Action Summary	Application No.	Applicant(s)	
	10/568,525	KASHIWABARA ET AL.	
	Examiner	Art Unit	
	ELMITO BREVAL	2889	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 July 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 8-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 8-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *10/06/2010*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

The amendment filed on 07/26/2010 has been entered.

Response to Arguments

Applicant's arguments are as follows:

(1), Yamazaki fails to disclose or suggest an organic layer including a plurality of light emitting layers provided between the anode and the cathode, wherein said light emitting layers comprise a red light emitting layer provided on the anode, a green light emitting layer provided directly on the red light emitting layer, and a blue light emitting layer provided directly on the green light, as recited in the present claims.

(2), Yamazaki's OLED structures have only one recombination region between the anode and the cathode even though Yamazaki's emission layer (309) is composed of an emission layer (309a), an emission layer (309b), and an emission layer (309c).

(3), Yamazaki discloses ([0040]) the three kinds of emission layers for the colors R (red), G (green), and B (blue) may be formed in line in each of the pixels. As such, it would seem that any color mixing would be accomplished in Yamazaki through lateral proximity of the three separate sub-pixels, rather than vertically laminating three different light emitting layers between the anode and the cathode, as presently claimed.

(4), Hatwar fails to remedy the deficiencies of Yamazaki because Hatwar's structure is about a laminating of two color layers (Yellow/Blue).

Examiner's responses to Applicant's arguments are as follows:

(1), Yamazaki teaches (in at least fig. 3B) an organic light emitting device comprised of, in part, an anode (303), a first light emitting layer (309a) is provided on

the anode, a second light emitting layer (309b) is provided directly on the first light emitting layer, and a third light emitting layer (309c) is provided directly on the second light emitting layer. Yamazaki teaches (in paragraph [0040]) the emission layers are R (red), G (green) and B (blue). At the time of the invention, one ordinary skill in the art would easily contemplate of forming the red light emitting layer of Yamazaki on the anode side, the green light emitting layer directly on the red light emitting layer, and the blue light emitting layer directly on the green light emitting layer for the purpose of providing a color display device with a high and stable light efficiency. Also, I previously stated there are there are only six possible orders to form the three colors between the anode and the cathode (i.e. RGB, RBG, GRB, GBR, BRG, and BGR).

(2), Yamazaki teaches (in at least fig. 3B) the light emitting layer comprised of three layers (309a, 309b, 309c), and the three layers are R (red), G (green), and B (blue) ([0040]). In order for each light emitting layer to emit light, there must be recombination in each one of them separately.

(3), Yamazaki discloses ([0040]) the three kinds of emission layers for the colors R (red), G (green), and B (blue) may be formed in line in each of the pixels. As can be seen in Yamazaki (at least fig. 3B), the three light emitting layers (309a-309c) are formed vertically in line. Therefore, it is understood that Yamazaki is referring to the three different layers that are vertically in line as disclosed in fig. 3B, not lateral lamination as understood by the Applicant.

(4), the examiner notes that Hatwar is not relied upon to disclose a three layers light emitting structure. As shown above, Yamazaki discloses that limitation. Hatwar is

relied upon to teach a blue light-emitting layer that comprises a positive and negative charge transporting blue light emitting layer, and Applicant is not disputing that.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1, 8-10, 12-14 and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki (US. Pub: 2001/0031509) of record.

Regarding claim 1, Yamazaki ('509) teaches (in at least figs. 3a and 3b) an organic light emitting comprising an anode (304 of fig. 3a), a cathode (306), and an organic layer (309; [0035]) including a plurality of light emitting layers (309a, 309b, 309c) provided between the anode and the cathode, wherein said light emitting layers emit red, green and blue light ([0040]), but silent about which layer among the three layers that individually emits red, green or blue.

However, Yamazaki ('509) teaches (in at least fig. 3b) the three light emitting layers are provided directly in contact with one another. Also, the examiner notes that there are only six possible orders to form the three colors between the anode and the cathode (i.e. RGB, RBG, GRB, GBR, BRG, and BGR). At the time of the invention, one of ordinary skill in the art would easily contemplate of forming the three light emitting colors, red, green and blue of Yamazaki in this order from the anode side for the purpose of providing a color display device with high and stable light efficiency.

Regarding claim 8, Yamazaki ('509) teaches (in at least figs. 3a and 3b) a display comprising a color filter ([0040]) provide on a light take-out surface side of an organic EL device for emitting white light, wherein said organic El device comprises an organic layer (309) including a plurality of light emitting layers (309a, 309b, 309c) provided between the anode and the cathode, wherein said light emitting layers emit red, green and blue light ([0040]), but silent about which layer among the three layers that individually emits red, green and blue.

However, Yamazaki ('509) teaches (in at least fig. 3b) the three light emitting layers provided directly in contact with one another. Also, the examiner notes that there are only six possible orders to form the three colors between the anode and the cathode (i.e. RGB, RBG, GRB, GBR, BRG, and BGR). At the time of the invention, one of ordinary skill in the art would easily contemplate of forming the three light emitting colors, red, green and blue of Yamazaki in this order from the anode side for the purpose of providing a color display device with high and stable light efficiency.

Regarding claim 9, Yamazaki ('509) teaches (in at least fig. 3b) each light emitting layer composed of a single layer (i.e. the red light emitting layer also composed of a single layer).

Regarding claim 10, Yamazaki ('509) teaches (in at least fig. 3b) each light emitting layer composed of a single layer (i.e. the green light emitting layer also composed of a single layer).

Regarding claim 12, Yamazaki ('509) teaches (in at least figs. 3a and 3b) the red light emitting layer supplies holes to the green light emitting layer (i.e. during recombination holes from the red light emitting layer that come from the anode will also form in the green light emitting layer in order to emit light).

Regarding claim 13, Yamazaki ('509) teaches the blue light emitting supplies electrons to the green light emitting layer (i.e. during recombination electron from the blue light emitting layer will also form in the green light emitting layer).

Regarding claim 14, Yamazaki ('509) teaches (in at least figs. 3a and 3b) an organic light emitting comprising an anode (304 of fig. 3a), a cathode (306), and an organic layer (309; [0035]) including a plurality of light emitting layers (309a, 309b, 309c) provided between the anode and the cathode, wherein said light emitting layers emit red, green and blue light ([0040]), but silent about which layer among the three layers that individually emits red, green or blue.

However, Yamazaki ('509) teaches (in at least fig. 3b) the three light emitting layers provided directly in contact with one another. Also, the examiner notes that there are only six possible orders to form the three colors between the anode and the cathode

(i.e. RGB, RBG, GRB, GBR, BRG, and BGR). At the time of the invention, one of ordinary skill in the art would easily contemplate of forming the three light emitting colors, red, green and blue of Yamazaki in this order from the anode side for the purpose of providing a color display device with high and stable light efficiency.

Regarding claim 17, Yamazaki ('509) teaches the red light emitting layer has a hole transporting property, the green light emitting layer has a positive and negative charge transporting property, and the blue light emitting layer has an electron transporting property (i.e. during recombination all these properties hold).

Regarding claim 18, Yamazaki ('509) teaches the red light emitting layer has a hole transporting property, the green light emitting layer has a positive and negative charge transporting property, and the blue light emitting layer has an electron transporting property (i.e. during recombination all these properties hold).

Regarding claim 19, Yamazaki ('509) teaches the red light emitting layer has a hole transporting property, the green light emitting layer has a positive and negative charge transporting property, and the blue light emitting layer has an electron transporting property (i.e. during recombination all these properties hold).

Claims 16, and 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki (US. Pub: 2001/0031509) of record in view of Hotwar et al., (US. Pub: 2004/0185300).

Regarding claim 16, Yamazaki ('509) teaches all the claimed limitations except for expressly discloses the blue light emitting layer comprises a positive and negative charge transporting blue light emitting layer.

Further regarding claim 16, Hatwar ('300) teaches a white light OLED device comprised of, in part, a blue light-emitting layer being doped with both electron-transporting and hole transporting material in order to improve the efficiency and operational stability (abstract). At the time of the invention, it would have been obvious to one of ordinary skill in the art to contemplate of using the blue light emitting layer of Hatwar in place of the blue light emitting layer of Yamazaki for the purpose of having a device with improve light efficiency and operational stability.

Regarding claim 20, Hatwar ('300) teaches a blue light-emitting layer being doped with both electron-transporting and hole-transporting material. The reason for combining is the same as for claim 16.

Regarding claim 21, Hatwar ('300) teaches a blue light-emitting layer being doped with both electron-transporting and hole-transporting material. The reason for combining is the same as for claim 16.

Regarding claim 22, Hatwar ('300) teaches a blue light-emitting layer being doped with both electron-transporting and hole-transporting material. The reason for combining is the same as for claim 16.

Claims 11 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki (US. Pub: 2001/0031509) of record in view of Suzuki et al., (US. Pat: 6,198,217) of record.

Regarding claims 11 and 15, Yamazaki ('217) teaches all the claimed limitations except for a protective film covering the organic layer.

Further regarding claims 11 and 15, Suzuki ('217) teaches an organic EL device comprised of, in part, a protective layer (P of fig. 1; col. 2, line 60) covering the organic layer for the purpose of having a device that is well protected against moisture/oxygen.

Hence, it would have been obvious to one of ordinary skill in the art at the time the invention was made to contemplate of using the protective layer of Suzuki in the device of Yamazaki for the purpose of having a device that is well protected against moisture/oxygen.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ELMITO BREVAL whose telephone number is (571)270-3099. The examiner can normally be reached on M-F (8:30 AM-5:00 Pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Toan Ton can be reached on (571)-272-2303. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Bumsuk Won/
Primary Examiner, Art Unit 2889

October 21, 2010
/Elmito Breval/
Examiner, Art Unit 2889